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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/685,387

10/16/2003

Takeya Fujino

L8462.03113

9778

7590

03/16/2005

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EXAMINER

POTTER, ROY KARL

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/685,387

Applicant(s)

FUJINO ET AL.

Examiner

Roy K. Potter

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9,10,17,23,24,29 and 30 is/are allowed.
- 6) ☒ Claim(s) 1-8,15,16 and 18-22 is/are rejected.
- 7) ☒ Claim(s) 11-14 and 25-28 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/14/03</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claims 1 – 30 are pending.

Claim Rejections - 35 USC § 112

Claims 4 – 8 and 18 - 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 18 recite, beginning in line 4, that “ wherein an entire area of a chip is swept while overlap of regions of a unit area determined by a manufacturing process is allowed”. This is not clearly understood.

Claims 5 and 19, which depend on claim 1 and 15 respectively, recite that there is an increase in the rate of reduction of the number of contacts when the spacing is increased is varied according to the size of the contact array. This claim is not clearly understood as the number of contacts in the array of the integrated circuit recited in claim 1 is constant and does not vary. Claim 6 - 8, which depend on claims 2 – 4 respectively, are not clearly understood for the same reason, as are claims 20 – 22.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 4, 15 – 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Nguyen.

Nguyen, U.S. Patent No. 5,477,933 discloses an electronic device interconnection technique. As shown in Figure 2, semiconductor integrated circuit 11 has a contact array comprised of solder balls 12. The solder balls 12 are aligned in a vertical direction and a horizontal direction. The contact spacing in at least one of the horizontal or vertical direction is larger than a spacing determined by a manufacturing process, as a process could not be used to produce spacing smaller than it is capable of producing. The spacing must inherently be at the limit or larger.

Claim 3, beginning on line 4, recites “product by process” claim language. The applicant should note that such claim language is directed to the product per se and applicant cannot rely on process language to patentably distinguish the product.

Claim 4 recites that the number of contact in an area “is not more than a predetermined value”. This limitation merely recites that the number of contacts in an area has a numerical relationship with a smaller number, and would be inherent.

Allowable Subject Matter

Claims 9 – 10, 17, 23 - 24 and 29 – 30 are allowed.

The prior art does not teach or suggest the recited divided contact array of claims 9 – 10 or the method of making it recited in claims 23 - 24

The prior art does not teach or suggest the method recited in claim 17 including first and second contact arrays with a shift.

The prior art also does not teach or suggest the recited odd and even numbered rows with the shift of a half pitch recited in claims 29 – 30.

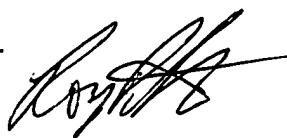
Claims 11 – 14 and 25 – 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not teach or suggest the longitudinally laminated layers of contact arrays recited in claims 11 – 14 or the method used to make the array recited in claims 25 – 28.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roy K. Potter whose telephone number is 571 272 1842. The examiner can normally be reached on M-F.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Roy K Potter
Primary Examiner
Art Unit 2822